



## RAW SEQUENCE LISTING ERROR REPORT

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Application Serial Number: 10/724,972  
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Date Processed by STIC: 12/17/03

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1. EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
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Revised 10/08/03



IFWO

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/724,972

DATE: 12/17/2003

TIME: 07:52:51

Input Set : D:\PATH03-16.pto.txt

Output Set: N:\CRF4\12162003\J724972.raw

4 <110> APPLICANT: Doucette-Stamm, Lynn  
 5 Bush, David  
 7 <120> TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO  
 STAPHYLOCOCCUS  
 8 EPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS  
 10 <130> FILE REFERENCE: PATH03-16  
 C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/724,972  
 C--> 12 <141> CURRENT FILING DATE: 2003-12-01  
 12 <150> PRIOR APPLICATION NUMBER: 09/450,969  
 13 <151> PRIOR FILING DATE: 1999-11-29  
 15 <150> PRIOR APPLICATION NUMBER: 09/134,001  
 16 <151> PRIOR FILING DATE: 1998-08-13  
 18 <150> PRIOR APPLICATION NUMBER: 60/064,964  
 19 <151> PRIOR FILING DATE: 1997-11-08  
 21 <150> PRIOR APPLICATION NUMBER: 60/055,779  
 22 <151> PRIOR FILING DATE: 1997-08-14  
 24 <160> NUMBER OF SEQ ID NOS: 7544

Does Not Comply  
 Corrected Diskette Needed  
 (p.27)

## ERRORED SEQUENCES

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 77798 <212> TYPE: PRT  
 77799 <213> ORGANISM: S.epidermidis  
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 77805 20 25 30  
 77806 Thr Tyr Asn Phe Gln Ile Thr Ser Asn Asn Lys Glu Lys Thr Ser Arg  
 77807 35 40 45  
 77808 Ile Gly Val Ala Ile Ala Leu Asn Asn Arg Asp Lys Leu Gln Lys Phe  
 77809 50 55 60  
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 77811 65 70 75 80  
 77812 Leu Val Phe Met Gly Ile Asn Thr Asn His Ala Ser Ala Asp Glu Leu  
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 77814 Asn Gln Asn Gln Lys Leu Ile Lys Gln Leu Asn Gln Thr Asp Asp Asp  
 77815 100 105 110  
 77816 Asp Ser Asn Thr His Ser Gln Glu Ile Glu Asn Asn Lys Gln Asn Ser  
 77817 115 120 125  
 77818 Ser Gly Lys Thr Glu Ser Leu Arg Ser Ser Thr Ser Gln Asn Gln Ala  
 77819 130 135 140

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/724,972

DATE: 12/22/2003

TIME: 07:13:25

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73656					165					170						175
73657	Glu	Ala	Asn	Met	Asn	Asn	Glu	Pro	Leu	Lys	Val	Asp	Asn	Ser	Thr	Met
73658				180					185						190	
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73661	Asn	Lys	His	His	Lys	Leu	Thr	Glu	Asn	Val	Leu	Ala	Glu	Ser	Arg	Ala
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73664	225					230					235					240
73665	Gln	Gln	Val	His	Pro	Pro	Leu	Asp	Lys	Asn	Ala	Leu	Gln	Ala	Phe	Phe
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73667	Asp	Ala	Ser	Tyr	His	Asn	Tyr	Arg	Met	Ile	Asp	Arg	Asp	Arg	Ala	Asp
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73669	Ala	Thr	Glu	Tyr	Gln	Lys	Val	Lys	Ser	Thr	Phe	Asp	Tyr	Val	Asn	Asp
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73672		290				295						300				
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73674	305					310					315					320
73675	Gln	Ser	Thr	Thr	Glu	Lys	Arg	Gly	Arg	Arg	Ser	Thr	Arg	Ser	Val	Val
73676				325						330					335	
73677	Glu	Asn	Arg	Ser	Ser	Arg	Ser	Asp	Tyr	Leu	Asp	Ala	Arg	Thr	Glu	Tyr
73678			340					345						350		
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73680		355					360						365			
73681	Phe	His	Ala	Ser	Asn	Arg	Arg	Trp	Pro	Tyr	Asn	Leu	Pro	Arg	Ser	Arg
73682		370				375						380				
73683	Asn	Ile	Leu	Arg	Ala	Ser	Asp	Val	Gln	Gly	Asn	Ala	Tyr	Ile	Thr	Thr
73684	385					390					395					400
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73686				405						410						415
73687	His	Lys	Gly	His	Glu	Tyr	Met	Tyr	Tyr	Trp	Phe	Gly	Leu	Pro	Ser	Asp
73688			420						425						430	
73689	Gln	Thr	Pro	Thr	Gly	Pro	Val	Thr	Phe	Thr	Ile	Ile	Asn	Arg	Asp	Gly
73690		435					440						445			
73691	Ser	Ser	Thr	Ser	Thr	Gly	Gly	Val	Gly	Phe	Gly	Ser	Gly	Ala	Pro	Leu
73692		450				455						460				
73693	Pro	Gln	Phe	Trp	Arg	Ser	Ala	Gly	Ala	Ile	Asn	Ser	Ser	Val	Ala	Asn
73694	465					470					475					480
73695	Asp	Phe	Lys	His	Gly	Ser	Ala	Thr	Asn	Tyr	Ala	Phe	Tyr	Asp	Gly	Val
73696				485						490					495	
73697	Asn	Asn	Phe	Ser	Asp	Phe	Ala	Arg	Gly	Gly	Glu	Leu	Tyr	Phe	Asp	Arg
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PATENT APPLICATION: US/10/724,972

DATE: 12/22/2003

TIME: 07:13:25

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73706					565					570						575	
73707	Ser	Gly	Glu	Tyr	Lys	Gln	Ala	Thr	Asn	Tyr	Asn	Gln	Leu	Tyr	Val	Glu	
73708				580					585						590		
73709	Pro	Tyr	Lys	Asn	Tyr	Arg	Asn	Arg	Val	Gln	Ser	Asn	Val	Gln	Val	Lys	
73710			595					600					605				
73711	Asn	Arg	Thr	Leu	His	Leu	Lys	Arg	Thr	Ile	Arg	Gln	Phe	Asp	Pro	Thr	
73712		610					615					620					
73713	Leu	Gln	Arg	Thr	Thr	Asp	Val	Pro	Ile	Leu	Asp	Ser	Asp	Gly	Ser	Gly	
73714		625				630					635					640	
73715	Ser	Ile	Asp	Ser	Val	Tyr	Asp	Pro	Leu	Ser	Tyr	Val	Lys	Asn	Val	Thr	
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73718			660					665						670			
73719	Arg	Trp	Gln	Gly	Ala	Asn	Ala	Met	Asn	Ala	Tyr	Gln	Ile	Glu	Glu	Leu	
73720		675					680						685				
73721	Phe	Ser	Gln	Glu	Asn	Leu	Gln	Asn	Ala	Ala	Arg	Ser	Gly	Arg	Pro	Ile	
73722		690					695				700						
73723	Gln	Phe	Leu	Val	Gly	Phe	Asp	Val	Glu	Asp	Ser	His	His	Asn	Pro	Glu	
73724		705				710					715					720	
73725	Thr	Leu	Leu	Pro	Val	Asn	Leu	Tyr	Val	Lys	Pro	Glu	Leu	Lys	His	Thr	
73726				725						730					735		
73727	Ile	Glu	Leu	Tyr	His	Asp	Asn	Glu	Lys	Gln	Asp	Arg	Lys	Glu	Phe	Ser	
73728			740						745					750			
73729	Val	Ser	Lys	Arg	Ala	Gly	His	Gly	Val	Phe	Gln	Val	Met	Ser	Gly	Thr	
73730			755					760					765				
73731	Leu	His	Asn	Thr	Val	Gly	Ser	Gly	Ile	Leu	Pro	Tyr	Gln	Gln	Glu	Ile	
73732		770					775					780					
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73734		785				790					795					800	
73735	Ile	Thr	Gly	Tyr	Pro	Asn	Thr	Leu	Thr	Leu	Gln	Asn	Ala	Val	Gly	Arg	
73736				805						810					815		
73737	Thr	Asn	Asn	Ala	Thr	Glu	Lys	Asn	Leu	Ala	Leu	Val	Gly	His	Ile	Asp	
73738			820					825						830			
73739	Pro	Gly	Asn	Tyr	Phe	Ile	Thr	Val	Lys	Phe	Gly	Asp	Lys	Val	Glu	Gln	
73740		835						840					845				
73741	Phe	Glu	Ile	Arg	Ser	Lys	Pro	Thr	Pro	Pro	Arg	Ile	Ile	Thr	Thr	Ala	
73742		850					855					860					
73743	Asn	Glu	Leu	Arg	Gly	Asn	Pro	Asn	His	Lys	Pro	Glu	Ile	Arg	Val	Thr	
73744		865				870					875					880	
73745	Asp	Ile	Pro	Asn	Asp	Thr	Thr	Ala	Lys	Ile	Lys	Leu	Val	Met	Gly	Gly	
73746				885						890					895		
73747	Thr	Asp	Gly	Asp	His	Asp	Pro	Glu	Ile	Asn	Pro	Tyr	Thr	Val	Pro	Glu	
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## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/724,972

DATE: 12/22/2003

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Output Set: N:\CRF4\1222003\J724972.raw

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73754	945 950 955 960
73755	Ser Asn Phe Ser Asn Ser Val Pro Phe Ser Ser Asp Thr Thr Pro Pro
73756	965 970 975
73757	Thr Ile Asn Glu Pro Ala Gly Leu Val His Lys Tyr Tyr Arg Gly Asp
73758	980 985 990
73759	His Val Glu Ile Thr Leu Pro Val Thr Asp Asn Thr Gly Gly Ser Gly
73760	995 1000 1005
73761	Leu Arg Asp Val Asn Val Asn Leu Pro Gln Gly Trp Thr Lys Thr Phe
73762	1010 1015 1020
73763	Thr Ile Asn Pro Asn Asn Thr Glu Gly Thr Leu Lys Leu Ile Gly
73764	1025 1030 1035 1040
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73766	1045 1050 1055
73767	Thr Ala Thr Asp Asn Ser Gly Asn Thr Thr Asn Pro Ala Lys Thr Phe
73768	1060 1065 1070
73769	Ile Leu Asn Val Gly Lys Leu Ala Asp Asp Leu Asn Pro Val Gly Leu
73770	1075 1080 1085
73771	Ser Arg Asp Gln Leu Gln Leu Val Thr Asp Pro Ser Ser Leu Ser Asn
73772	1090 1095 1100
73773	Ser Glu Arg Glu Glu Val Lys Arg Lys Ile Ser Glu Ala Asn Ala Asn
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73775	Ile Arg Ser Tyr Leu Leu Gln Asn Asn Pro Ile Leu Ala Gly Val Asn
73776	1125 1130 1135
73777	Gly Asp Val Thr Phe Tyr Tyr Arg Asp Gly Ser Val Asp Val Ile Asp
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73779	Ala Glu Asn Val Ile Thr Tyr Glu Pro Glu Arg Lys Ser Ile Phe Ser
73780	1155 1160 1165
73781	Glu Asn Gly Asn Thr Asn Lys Lys Glu Ala Val Ile Thr Ile Ala Arg
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73783	Gly Gln Asn Tyr Thr Ile Gly Pro Asn Leu Arg Lys Tyr Phe Ser Leu
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73797	Asn Leu Asn Asp Asn Asp Ile Thr Val Ser Asn Asn Phe Asp His Arg
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Output Set: N:\CRF4\12222003\J724972.raw

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73805	Arg	Asn	Thr	Asp	Gly	Gly	Leu	Glu	Trp	Ser	Pro	Asp	His	Lys	Ser	Leu			
73806					1365					1370						1375			
73807	Ile	Tyr	Lys	Tyr	Asp	Ala	Thr	Leu	Gly	Arg	Gln	Ile	Asn	Thr	Asn	Asp			
73808					1380				1385						1390				
73809	Val	Leu	Thr	Leu	Leu	Gln	Ala	Thr	Ala	Lys	Asn	Ser	Asn	Leu	Arg	Ser			
73810					1395				1400				1405						
73811	Asn	Ile	Asn	Ser	Asn	Glu	Lys	Gln	Leu	Ala	Glu	Arg	Gly	Ser	Asn	Gly			
73812		1410					1415					1420							
73813	Tyr	Ser	Lys	Ser	Ile	Ile	Arg	Asp	Asp	Gly	Glu	Lys	Ser	Tyr	Leu	Leu			
73814		1425				1430					1435					1440			
73815	Asn	Ser	Asn	Pro	Ile	Gln	Val	Leu	Asp	Leu	Val	Glu	Pro	Asp	Asn	Gly			
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73820			1475				1480					1485							
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73826					1525					1530						1535			
73827	Asn	Val	Ile	Asn	Val	Tyr	Phe	Val	Pro	Ser	Asp	Lys	Val	Asn	Pro	Ser			
73828				1540					1545						1550				
73829	Ile	Thr	Val	Gly	Asn	Tyr	Asp	His	His	Thr	Val	Tyr	Ser	Gly	Glu	Thr			
73830		1555					1560							1565					
73831	Phe	Lys	Asn	Thr	Ile	Asn	Val	Asn	Asp	Asn	Tyr	Gly	Leu	Asn	Thr	Val			
73832		1570				1575						1580							
73833	Ala	Ser	Thr	Ser	Asp	Ser	Ala	Ile	Thr	Met	Thr	Arg	Asn	Asn	Asn	Glu			
73834		1585				1590					1595					1600			
73835	Leu																		

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73851   Thr Val Pro Val Lys His Val Leu Leu Glu Val Val Pro Thr Thr Arg
73852           1730                      1735                      1740
73853   Thr Thr Val Arg Gly Gln Gln Phe Pro Thr Gly Lys Gly Thr Ser Pro
73854   1745                      1750                      1755                      1760
73855   Asn Asp Phe Phe Ser Leu Arg Thr Gly Gly Pro Val Asp Ala Arg Ile
73856           1765                      1770                      1775
73857   Val Trp Val Asn Asn Gln Gly Pro Asp Ile Asn Ser Asn Gln Ile Gly
73858           1780                      1785                      1790
73859   Arg Asp Leu Thr Leu His Ala Glu Ile Phe Phe Asp Gly Glu Thr Thr
73860           1795                      1800                      1805
73861   Pro Ile Arg Lys Asp Thr Thr Tyr Lys Leu Ser Gln Ser Ile Pro Lys
73862           1810                      1815                      1820
73863   Gln Ile Tyr Glu Thr Thr Thr Ile Asn Gly Arg Phe Asn Ser Ser Gly Asp
73864   1825                      1830                      1835                      1840
73865   Ala Tyr Pro Gly Asn Phe Val Gln Ala Val Asn Gln Tyr Trp Pro Glu
73866           1845                      1850                      1855
73867   His Met Asp Phe Arg Trp Ala Gln Gly Ser Gly Thr Pro Ser Ser Arg
73868           1860                      1865                      1870
73869   Asn Ala Gly Ser Phe Thr Lys Thr Val Thr Val Val Tyr Gln Asn Gly
73870           1875                      1880                      1885
73871   Gln Thr Glu Asn Val Asn Val Leu Phe Lys Val Lys Pro Asn Lys Pro
73872           1890                      1895                      1900
73873   Val Ile Asp Ser Asn Ser Val Ile Ser Lys Gly Gln Leu Asn Gly Gln
73874   1905                      1910                      1915                      1920
73875   Gln Ile Leu Val Arg Asn Val Pro Gln Asn Ala Gln Val Thr Leu Tyr
73876           1925                      1930                      1935
73877   Gln Ser Asn Gly Thr Val Ile Pro Asn Thr Asn Thr Thr Ile Asp Ser
73878           1940                      1945                      1950
73879   Asn Gly Ile Ala Thr Val Thr Ile Gln Gly Thr Leu Pro Thr Gly Asn
73880           1955                      1960                      1965
73881   Ile Thr Ala Lys Thr Ser Met Thr Asn Asn Val Thr Tyr Thr Lys Gln
73882           1970                      1975                      1980
73883   Asn Ser Ser Gly Ile Ala Ser Asn Thr Thr Glu Asp Ile Ser Val Phe
73884   1985                      1990                      1995                      2000
73885   Ser Glu Asn Ser Asp Gln Val Asn Val Thr Ala Gly Met Gln Ala Lys
73886           2005                      2010                      2015
73887   Asn Asp Gly Ile Lys Ile Ile Lys Gly Thr Asn Tyr Asn Phe Asn Asp
73888           2020                      2025                      2030
73889   Phe Asn Ser Phe Ile Ser Asn Ile Pro Ala His Ser Thr Leu Thr Trp
73890           2035                      2040                      2045
73891   Asn Glu Glu Pro Asn Ser Trp Lys Asn Asn Ile Gly Thr Thr Thr Lys
73892           2050                      2055                      2060
73893   Thr Val Thr Val Thr Leu Pro Asn His Gln Gly Thr Arg Thr Val Asp
73894   2065                      2070                      2075                      2080
73895   Ile Pro Ile Thr Ile Tyr Pro Thr Val Thr Ala Lys Asn Pro Val Arg
73896           2085                      2090                      2095
73897   Asp Gln Lys Gly Arg Asn Leu Thr Asn Gly Thr Asp Val Tyr Asn Tyr

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73901	Asp	Asn	Arg	Gln	Pro	Asp	Lys	Asn	Ile	Ala	Gly	Val	Gln	Asn	Leu	Ile
73902			2130				2135					2140				
73903	Ala	Leu	Val	Asn	Tyr	Pro	Gly	Ile	Ser	Thr	Pro	Leu	Glu	Val	Pro	Val
73904			2145				2150					2155				2160
73905	Lys	Val	Trp	Val	Tyr	Asn	Phe	Asp	Phe	Thr	Gln	Pro	Ile	Tyr	Lys	Ile
73906					2165						2170					2175
73907	Gln	Val	Gly	Asp	Thr	Phe	Pro	Lys	Gly	Thr	Trp	Ala	Gly	Tyr	Tyr	Lys
73908				2180						2185					2190	
73909	His	Leu	Glu	Asn	Gly	Glu	Gly	Leu	Pro	Ile	Asp	Gly	Trp	Lys	Phe	Tyr
73910			2195					2200					2205			
73911	Trp	Asn	Gln	Gln	Ser	Thr	Gly	Thr	Thr	Ser	Asp	Gln	Trp	Gln	Ser	Leu
73912			2210				2215					2220				
73913	Ala	Tyr	Thr	Arg	Thr	Pro	Phe	Val	Lys	Thr	Gly	Thr	Tyr	Asp	Val	Val
73914			2225				2230				2235					2240
73915	Asn	Pro	Ser	Asn	Trp	Gly	Val	Trp	Gln	Thr	Ser	Gln	Ser	Ala	Lys	Phe
73916					2245						2250					2255
73917	Ile	Val	Thr	Asn	Ala	Lys	Pro	Asn	Gln	Pro	Thr	Ile	Thr	Gln	Ser	Lys
73918				2260						2265						2270
73919	Thr	Gly	Asp	Val	Thr	Val	Thr	Pro	Gly	Ala	Val	Arg	Asn	Ile	Leu	Ile
73920			2275					2280					2285			
73921	Ser	Gly	Thr	Asn	Asp	Tyr	Ile	Gln	Ala	Ser	Ala	Asp	Lys	Ile	Val	Ile
73922			2290				2295					2300				
73923	Asn	Lys	Asn	Gly	Asn	Lys	Leu	Thr	Thr	Phe	Val	Lys	Asn	Asn	Asp	Gly
73924			2305				2310					2315				2320
73925	Arg	Trp	Thr	Val	Glu	Thr	Gly	Ser	Pro	Asp	Ile	Asn	Gly	Ile	Gly	Pro
73926					2325						2330					2335
73927	Thr	Asn	Asn	Gly	Thr	Ala	Ile	Ser	Leu	Ser	Arg	Leu	Ala	Val	Arg	Pro
73928				2340						2345					2350	
73929	Gly	Asp	Ser	Ile	Glu	Ala	Ile	Ala	Thr	Glu	Gly	Ser	Gly	Glu	Thr	Ile
73930			2355						2360				2365			
73931	Ser	Thr	Ser	Ala	Thr	Ser	Glu	Ile	Tyr	Ile	Val	Lys	Ala	Pro	Gln	Pro
73932			2370					2375				2380				
73933	Glu	Gln	Val	Ala	Thr	His	Thr	Tyr	Asp	Asn	Gly	Thr	Phe	Asp	Ile	Leu
73934			2385				2390					2395				2400
73935	Pro	Asp	Asn	Ser	Arg	Asn	Ser	Leu	Asn	Pro	Thr	Glu	Arg	Val	Glu	Ile
73936					2405						2410					2415



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73947   His Thr Leu Thr Ile Asn Glu Ile Val Lys Glu Gln Gly Gln Asn Val
73948               2500                      2505                      2510
73949   Thr Asn Asp Asp Ile Asn Asn Ala Val Gln Val Pro Asn Lys Asn Arg
73950               2515                      2520                      2525
73951   Val Ala Ile Lys Gln Gly Asn Ala Leu Pro Thr Asn Leu Ala Gly Gly
73952               2530                      2535                      2540
73953   Ser Thr Ser His Ile Pro Val Val Ile Tyr Tyr Ser Asp Gly Ser Ser
73954   2545                      2550                      2555                      2560
73955   Glu Glu Ala Thr Glu Thr Val Arg Thr Lys Val Asn Lys Thr Glu Leu
73956               2565                      2570                      2575
73957   Ile Asn Ala Arg Arg Arg Leu Asp Glu Glu Ile Ser Lys Glu Asn Lys
73958               2580                      2585                      2590
73959   Thr Pro Ser Ser Ile Arg Asn Phe Asp Gln Ala Met Asn Arg Ala Gln
73960               2595                      2600                      2605
73961   Ser Gln Ile Asn Thr Ala Lys Ser Asp Ala Asp Gln Val Ile Gly Thr
73962   2610                      2615                      2620
73963   Glu Phe Ala Thr Pro Gln Gln Val Asn Ser Ala Leu Ser Lys Val Gln
73964   2625                      2630                      2635                      2640
73965   Ala Ala Gln Asn Lys Ile Asn Glu Ala Lys Ala Leu Leu Gln Asn Lys
73966               2645                      2650                      2655
73967   Ala Asp Asn Ser Gln Leu Val Arg Ala Lys Glu Gln Leu Gln Gln Ser
73968               2660                      2665                      2670
73969   Ile Gln Pro Ala Ala Ser Thr Asp Gly Met Thr Gln Asp Ser Thr Arg
73970               2675                      2680                      2685
73971   Asn Tyr Lys Asn Lys Arg Gln Ala Ala Glu Gln Ala Ile Gln His Ala
73972   2690                      2695                      2700
73973   Asn Ser Val Ile Asn Asn Gly Asp Ala Thr Ser Gln Gln Ile Asn Asp
73974   2705                      2710                      2715                      2720
73975   Ala Lys Asn Thr Val Glu Gln Ala Gln Arg Asp Tyr Val Glu Ala Lys
73976               2725                      2730                      2735
73977   Ser Asn Leu Arg Ala Asp Lys Ser Gln Leu Gln Ser Ala Tyr Asp Thr
73978               2740                      2745                      2750
73979   Leu Asn Arg Asp Val Leu Thr Asn Asp Lys Lys Pro Ala Ser Val Arg
73980               2755                      2760                      2765
73981   Arg Tyr Asn Glu Ala Ile Ser Asn Ile Arg Lys Glu Leu Asp Thr Ala
73982   2770                      2775                      2780
73983   Lys Ala Asp Ala Ser Ser Thr Leu Arg Asn Thr Asn Pro Ser Val Glu
73984   2785                      2790                      2795                      2800
73985   Gln Val Arg Asp Ala Leu Asn Lys Ile Asn Thr Val Gln Pro Lys Val
73986               2805                      2810                      2815
73987   Asn Gln Ala Ile Ala Leu Leu Gln Pro Lys Glu Asn Asn Ser Glu Leu
73988               2820                      2825                      2830
73989   Val Gln Ala Lys Lys Arg Leu Gln Asp Ala Val Asn Asp Ile Pro Gln
73990               2835                      2840                      2845
73991   Thr Gln Gly Met Thr Gln Gln Thr Ile Asn Asn Tyr Asn Asp Lys Gln
73992   2850                      2855                      2860
73993   Arg Glu Ala Glu Arg Ala Leu Thr Ser Ala Gln Arg Val Ile Asp Asn
73994   2865                      2870                      2875                      2880
73995   Gly Asp Ala Thr Thr Gln Glu Ile Thr Ser Glu Lys Ser Lys Val Glu

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73996		2885		2890		2895	
73997	Gln	Ala	Met	Gln	Ala	Leu	Thr
73998				2900		2905	
73999	Lys	Asn	Glu	Leu	Gln	Thr	Ala
74000				2915		2920	
74001	Thr	Asn	Gly	Lys	Lys	Pro	Ala
74002				2930		2935	
74003	Ala	Arg	Ile	Gln	Asn	Gln	Ile
74004				2945		2950	
74005	Ile	Leu	Gly	Asn	Asp	Asn	Pro
74006				2965		2970	
74007	Asn	Lys	Ile	Lys	Ala	Ile	Gln
74008				2980		2985	
74009	Leu	Gln	Asn	Lys	Glu	Asn	Asn
74010				2995		3000	
74011	Leu	Glu	Asn	Ala	Val	Asn	Asp
74012				3010		3015	
74013	Glu	Thr	Ile	Asn	Asn	Tyr	Asn
74014				3025		3030	
74015	Ile	Gln	Lys	Ala	Asn	Met	Ile
74016				3045		3050	
74017	Asp	Ile	Ser	Ser	Glu	Lys	Ser
74018				3060		3065	
74019	Gln	Asn	Ala	Lys	Asn	Asp	Leu
74020				3075		3080	
74021	Ala	Tyr	Asn	Lys	Leu	Ile	Gln
74022				3090		3095	
74023	Ser	Ser	Ile	Gln	Asn	Tyr	Lys
74024				3105		3110	
74025	Tyr	Asn	Thr	Ala	Lys	Asn	Glu
74026				3125		3130	
74027	Pro	Thr	Val	Asn	Ala	Val	Glu
74028				3140		3145	
74029	Gln	Pro	Glu	Val	Thr	Lys	Ala
74030				3155		3160	
74031	Asn	Ser	Glu	Leu	Val	Arg	Ala
74032				3170		3175	
74033	Ser	Gln	Pro	Ser	Leu	Asn	Gly
74034				3185		3190	
74035	Thr	Thr	Lys	Arg	Arg	Glu	Ala
74036				3205		3210	
74037	Ile	Ile	Asn	Asn	Gly	Asp	Ala
74038				3220		3225	
74039	Ile	Arg	Val	Glu	Glu	Ala	Thr
74040				3235		3240	
74041	Leu	Thr	Ala	Asp	Thr	Thr	Ser
74042				3250		3255	
74043	Arg	Arg	Gly	Asp	Thr	Asn	Asn
74044				3265		3270	

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74045      Asn Asn Thr Ile His Ser Leu Gln Ser Glu Ile Thr Gln Thr Glu Asn
74046                      3285                      3290                      3295
74047      Arg Ala Asn Thr Ile Ile Asn Lys Pro Ile Arg Ser Val Glu Glu Val
74048                      3300                      3305                      3310
74049      Asn Asn Ala Leu His Glu Val Asn Gln Leu Asn Gln Arg Leu Thr Asp
74050                      3315                      3320                      3325
74051      Thr Ile Asn Leu Leu Gln Pro Leu Ala Asn Lys Glu Ser Leu Lys Glu
74052                      3330                      3335                      3340
74053      Ala Arg Asn Arg Leu Glu Ser Lys Ile Asn Glu Thr Val Gln Thr Asp
74054      3345                      3350                      3355                      3360
74055      Gly Met Thr Gln Gln Ser Val Glu Asn Tyr Lys Gln Ala Lys Ile Lys
74056                      3365                      3370                      3375
74057      Ala Gln Asn Glu Ser Ser Ile Ala Gln Thr Leu Ile Asn Asn Gly Asp
74058                      3380                      3385                      3390
74059      Ala Ser Asp Gln Glu Val Ser Thr Glu Ile Glu Lys Leu Asn Gln Lys
74060                      3395                      3400                      3405
74061      Leu Ser Glu Leu Thr Asn Ser Ile Asn His Leu Thr Val Asn Lys Glu
74062                      3410                      3415                      3420
74063      Pro Leu Glu Thr Ala Lys Asn Gln Leu Gln Ala Asn Ile Asp Gln Lys
74064      3425                      3430                      3435                      3440
74065      Pro Ser Thr Asp Gly Met Thr Gln Gln Ser Val Gln Ser Tyr Glu Arg
74066                      3445                      3450                      3455
74067      Lys Leu Gln Glu Ala Lys Asp Lys Ile Asn Ser Ile Asn Asn Val Leu
74068                      3460                      3465                      3470
74069      Ala Asn Asn Pro Asp Val Asn Ala Ile Arg Thr Asn Lys Val Glu Thr
74070                      3475                      3480                      3485
74071      Glu Gln Ile Asn Asn Glu Leu Thr Gln Ala Lys Gln Gly Leu Thr Val
74072                      3490                      3495                      3500
74073      Asp Lys Gln Pro Leu Ile Asn Ala Lys Thr Ala Leu Gln Gln Ser Leu
74074      3505                      3510                      3515                      3520
74075      Asp Asn Gln Pro Ser Thr Thr Gly Met Thr Glu Ala Thr Ile Gln Asn
74076                      3525                      3530                      3535
74077      Tyr Asn Ala Lys Arg Gln Lys Ala Glu Gln Val Ile Gln Asn Ala Asn
74078                      3540                      3545                      3550
74079      Lys Ile Ile Glu Asn Ala Gln Pro Ser Val Gln Gln Val Ser Asp Glu
74080                      3555                      3560                      3565
74081      Lys Ser Lys Val Glu Gln Ala Leu Ser Glu Leu Asn Asn Ala Lys Ser
74082                      3570                      3575                      3580
74083      Ala Leu Arg Ala Asp Lys Gln Glu Leu Gln Gln Ala Tyr Asn Gln Leu
74084      3585                      3590                      3595                      3600
74085      Ile Gln Pro Thr Asp Leu Asn Asn Lys Lys Pro Ala Ser Ile Thr Ala
74086                      3605                      3610                      3615
74087      Tyr Asn Gln Arg Tyr Gln Gln Phe Ser Asn Glu Leu Asn Ser Thr Lys
74088                      3620                      3625                      3630
74089      Thr Asn Thr Asp Arg Ile Leu Lys Glu Gln Asn Pro Ser Val Ala Asp
74090                      3635                      3640                      3645
74091      Val Asn Asn Ala Leu Asn Lys Val Arg Glu Val Gln Gln Lys Leu Asn
74092                      3650                      3655                      3660
74093      Glu Ala Arg Ala Leu Leu Gln Asn Lys Glu Asp Asn Ser Ala Leu Val

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74094	3665	3670	3675	3680
74095	Arg Ala Lys Glu Gln Leu Gln Gln Ala Val Asp Gln Val Pro Ser Thr			
74096		3685	3690	3695
74097	Glu Gly Met Thr Gln Gln Thr Lys Asp Asp Tyr Asn Ser Lys Gln Gln			
74098		3700	3705	3710
74099	Ala Ala Gln Gln Glu Ile Ser Lys Ala Gln Gln Val Ile Asp Asn Gly			
74100		3715	3720	3725
74101	Asp Ala Thr Thr Gln Gln Ile Ser Asn Ala Lys Thr Asn Val Glu Arg			
74102		3730	3735	3740
74103	Ala Leu Glu Ala Leu Asn Asn Ala Lys Thr Gly Leu Arg Ala Asp Lys			
74104		3745	3750	3755
74105	Glu Glu Leu Gln Asn Ala Tyr Asn Gln Leu Thr Gln Asn Ile Asp Thr			
74106		3765	3770	3775
74107	Ser Gly Lys Thr Pro Ala Ser Ile Arg Lys Tyr Asn Glu Ala Lys Ser			
74108		3780	3785	3790
74109	Arg Ile Gln Thr Gln Ile Asp Ser Ala Lys Asn Glu Ala Asn Ser Ile			
74110		3795	3800	3805
74111	Leu Thr Asn Asp Asn Pro Gln Val Ser Gln Val Thr Ala Ala Leu Asn			
74112		3810	3815	3820
74113	Lys Ile Lys Ala Val Gln Pro Glu Leu Asp Lys Ala Ile Ala Met Leu			
74114		3825	3830	3835
74115	Lys Asn Lys Glu Asn Asn Asn Ala Leu Val Gln Ala Lys Gln Gln Leu			
74116		3845	3850	3855
74117	Gln Gln Ile Val Asn Glu Val Asp Pro Thr Gln Gly Met Thr Thr Asp			
74118		3860	3865	3870
74119	Thr Ala Asn Asn Tyr Lys Ser Lys Lys Arg Glu Ala Glu Asp Glu Ile			
74120		3875	3880	3885
74121	Gln Lys Ala Gln Gln Ile Ile Asn Asn Gly Asp Ala Thr Glu Gln Gln			
74122		3890	3895	3900
74123	Ile Thr Asn Glu Thr Asn Arg Val Asn Gln Ala Ile Asn Ala Ile Asn			
74124		3905	3910	3915
74125	Lys Ala Lys Asn Asp Leu Arg Ala Asp Lys Ser Gln Leu Glu Asn Ala			
74126		3925	3930	3935
74127	Tyr Asn Gln Leu Ile Gln Asn Val Asp Thr Asn Gly Lys Lys Pro Ala			
74128		3940	3945	3950
74129	Ser Ile Gln Gln Tyr Gln Ala Ala Arg Gln Ala Ile Glu Thr Gln Tyr			
74130		3955	3960	3965
74131	Asn Asn Ala Lys Ser Glu Ala His Gln Ile Leu Glu Asn Ser Asn Pro			
74132		3970	3975	3980
74133	Ser Val Asn Glu Val Ala Gln Ala Leu Gln Lys Val Glu Ala Val Gln			
74134		3985	3990	3995
74135	Leu Lys Val Asn Asp Ala Ile His Ile Leu Gln Asn Lys Glu Asn Asn			
74136		4005	4010	4015
74137	Ser Ala Leu Val Thr Ala Lys Asn Gln Leu Gln Gln Ser Val Asn Asp			
74138		4020	4025	4030
74139	Gln Pro Leu Thr Thr Gly Met Thr Gln Asp Ser Ile Asn Asn Tyr Glu			
74140		4035	4040	4045
74141	Ala Lys Arg Asn Glu Ala Gln Ser Ala Ile Arg Asn Ala Glu Ala Val			
74142		4050	4055	4060

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74143   Ile Asn Asn Gly Asp Ala Thr Ala Lys Gln Ile Ser Asp Glu Lys Ser
74144   4065                               4070                               4075                               4080
74145   Lys Val Glu Gln Ala Leu Ala His Leu Asn Asp Ala Lys Gln Gln Leu
74146                               4085                               4090                               4095
74147   Thr Ala Asp Thr Thr Glu Leu Gln Thr Ala Val Gln Gln Leu Asn Arg
74148                               4100                               4105                               4110
74149   Arg Gly Asp Thr Asn Asn Lys Lys Pro Arg Ser Ile Asn Ala Tyr Asn
74150                               4115                               4120                               4125
74151   Lys Ala Ile Gln Ser Leu Glu Thr Gln Ile Thr Ser Ala Lys Asp Asn
74152   4130                               4135                               4140
74153   Ala Asn Ala Val Ile Gln Lys Pro Ile Arg Thr Val Gln Glu Val Asn
74154   4145                               4150                               4155                               4160
74155   Asn Ala Leu Gln Gln Val Asn Gln Leu Asn Gln Gln Leu Thr Glu Ala
74156                               4165                               4170                               4175
74157   Ile Asn Gln Leu Gln Pro Leu Ser Asn Asn Asp Ala Leu Lys Ala Ala
74158                               4180                               4185                               4190
74159   Arg Leu Asn Leu Glu Asn Lys Ile Asn Gln Thr Val Gln Thr Asp Gly
74160   4195                               4200                               4205
74161   Met Thr Gln Gln Ser Ile Glu Ala Tyr Gln Asn Ala Lys Arg Val Ala
74162   4210                               4215                               4220
74163   Gln Asn Glu Ser Asn Thr Ala Leu Ala Leu Ile Asn Asn Gly Asp Ala
74164   4225                               4230                               4235                               4240
74165   Asp Glu Gln Gln Ile Thr Thr Glu Thr Asp Arg Val Asn Gln Gln Thr
74166                               4245                               4250                               4255
74167   Thr Asn Leu Thr Gln Ala Ile Asn Gly Leu Thr Val Asn Lys Glu Pro
74168   4260                               4265                               4270
74169   Leu Glu Thr Ala Lys Thr Ala Leu Gln Asn Asn Ile Asp Gln Val Pro
74170   4275                               4280                               4285
74171   Ser Thr Asp Gly Met Thr Gln Gln Ser Val Ala Asn Tyr Asn Gln Lys
74172   4290                               4295                               4300
74173   Leu Gln Ile Ala Lys Asn Glu Ile Asn Thr Ile Asn Asn Val Leu Ala
74174   4305                               4310                               4315                               4320
74175   Asn Asn Pro Asp Val Asn Ala Ile Lys Thr Asn Lys Ala Glu Ala Glu
74176   4325                               4330                               4335
74177   Arg Ile Ser Asn Asp Leu Thr Gln Ala Lys Asn Asn Leu Gln Val Asp
74178   4340                               4345                               4350
74179   Thr Gln Pro Leu Glu Lys Ile Lys Arg Gln Leu Gln Asp Glu Ile Asp
74180   4355                               4360                               4365
74181   Gln Gly Thr Asn Thr Asp Gly Met Thr Gln Asp Ser Val Asp Asn Tyr
74182   4370                               4375                               4380
74183   Asn Asp Ser Leu Ser Ala Ala Ile Ile Glu Lys Gly Lys Val Asn Lys
74184   4385                               4390                               4395                               4400
74185   Leu Leu Lys Arg Asn Pro Thr Val Glu Gln Val Lys Glu Ser Val Ala
74186   4405                               4410                               4415
74187   Asn Ala Gln Gln Val Ile Gln Asp Leu Gln Asn Ala Arg Thr Ser Leu
74188   4420                               4425                               4430
74189   Val Pro Asp Lys Thr Gln Leu Gln Glu Ala Lys Asn Arg Leu Glu Asn
74190   4435                               4440                               4445
74191   Ser Ile Asn Gln Gln Thr Asp Thr Asp Gly Met Thr Gln Asp Ser Leu

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74192	4450	4455	4460
74193	Asn Asn Tyr Asn Asp Lys Leu Ala Lys Ala Arg Gln Asn Leu Glu Lys		
74194	4465	4470	4475 4480
74195	Ile Ser Lys Val Leu Gly Gly Gln Pro Thr Val Ala Glu Ile Arg Gln		
74196	4485	4490	4495
74197	Asn Thr Asp Glu Ala Asn Ala His Lys Gln Ala Leu Asp Thr Ala Arg		
74198	4500	4505	4510
74199	Ser Gln Leu Thr Leu Asn Arg Glu Pro Tyr Ile Asn His Ile Asn Asn		
74200	4515	4520	4525
74201	Glu Ser His Leu Asn Asn Ala Gln Lys Asp Asn Phe Lys Ala Gln Val		
74202	4530	4535	4540
74203	Asn Ser Ala Pro Asn His Asn Thr Leu Glu Thr Ile Lys Asn Lys Ala		
74204	4545	4550	4555 4560
74205	Asp Thr Leu Asn Gln Ser Met Thr Ala Leu Ser Glu Ser Ile Ala Asp		
74206	4565	4570	4575
74207	Tyr Glu Asn Gln Lys Gln Gln Glu Asn Tyr Leu Asp Ala Ser Asn Asn		
74208	4580	4585	4590
74209	Lys Arg Gln Asp Tyr Asp Asn Ala Val Asn Ala Ala Lys Gly Ile Leu		
74210	4595	4600	4605
74211	Asn Gln Thr Gln Ser Pro Thr Met Ser Ala Asp Val Ile Asp Gln Lys		
74212	4610	4615	4620
74213	Ala Glu Asp Val Lys Arg Thr Lys Thr Ala Leu Asp Gly Asn Gln Arg		
74214	4625	4630	4635 4640
74215	Leu Glu Val Ala Lys Gln Gln Ala Leu Asn His Leu Asn Thr Leu Asn		
74216	4645	4650	4655
74217	Asp Leu Asn Asp Ala Gln Arg Gln Thr Leu Thr Asp Thr Ile Asn His		
74218	4660	4665	4670
74219	Ser Pro Asn Ile Asn Ser Val Asn Gln Ala Lys Glu Lys Ala Asn Thr		
74220	4675	4680	4685
74221	Val Asn Thr Ala Met Thr Gln Leu Lys Gln Thr Ile Ala Asn Tyr Asp		
74222	4690	4695	4700
74223	Asp Glu Leu His Asp Gly Asn Tyr Ile Asn Ala Asp Lys Asp Lys Lys		
74224	4705	4710	4715 4720
74225	Asp Ala Tyr Asn Asn Ala Val Asn Asn Ala Lys Gln Leu Ile Asn Gln		
74226	4725	4730	4735
74227	Ser Asp Ala Asn Gln Ala Gln Leu Asp Pro Ala Glu Ile Asn Lys Val		
74228	4740	4745	4750
74229	Thr Gln Arg Val Asn Thr Thr Lys Asn Asp Leu Asn Gly Asn Asp Lys		
74230	4755	4760	4765
74231	Leu Ala Glu Ala Lys Arg Asp Ala Asn Thr Thr Ile Asp Gly Leu Thr		
74232	4770	4775	4780
74233	Tyr Leu Asn Glu Ala Gln Arg Asn Lys Ala Lys Glu Asn Val Gly Lys		
74234	4785	4790	4795 4800
74235	Ala Ser Thr Lys Thr Asn Ile Thr Ser Gln Leu Gln Asp Tyr Asn Gln		
74236	4805	4810	4815
74237	Leu Asn Ile Ala Met Gln Ala Leu Arg Asn Ser Val Asn Asp Val Asn		
74238	4820	4825	4830
74239	Asn Val Lys Ala Asn Ser Asn Tyr Ile Asn Glu Asp Asn Gly Pro Lys		
74240	4835	4840	4845

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74241      Glu Ala Tyr Asn Gln Ala Val Thr His Ala Gln Thr Leu Ile Asn Ala
74242      4850                      4855                      4860
74243      Gln Ser Asn Pro Glu Met Ser Arg Asp Val Val Asn Gln Lys Thr Gln
74244      4865                      4870                      4875                      4880
74245      Ala Val Asn Thr Ala His Gln Asn Leu His Gly Gln Gln Lys Leu Glu
74246      4885                      4890                      4895
74247      Gln Ala Gln Ser Ser Ala Asn Thr Glu Ile Gly Asn Leu Pro Asn Leu
74248      4900                      4905                      4910
74249      Thr Asn Thr Gln Lys Ala Lys Glu Lys Glu Leu Val Asn Ser Lys Gln
74250      4915                      4920                      4925
74251      Thr Arg Thr Glu Val Gln Glu Gln Leu Asn Gln Ala Lys Ser Leu Asp
74252      4930                      4935                      4940
74253      Ser Ser Met Gly Thr Leu Lys Ser Leu Val Ala Lys Gln Pro Thr Val
74254      4945                      4950                      4955                      4960
74255      Gln Lys Thr Ser Val Tyr Ile Asn Glu Asp Gln Pro Glu Gln Ser Ala
74256      4965                      4970                      4975
74257      Tyr Asn Asp Ser Ile Thr Met Gly Gln Thr Ile Ile Asn Lys Thr Ala
74258      4980                      4985                      4990
74259      Asp Pro Val Leu Asp Lys Thr Leu Val Asp Asn Ala Ile Ser Asn Ile
74260      4995                      5000                      5005
74261      Ser Thr Lys Glu Asn Ala Leu His Gly Glu Gln Lys Leu Thr Thr Ala
74262      5010                      5015                      5020
74263      Lys Thr Glu Ala Ile Asn Ala Leu Asn Thr Leu Ala Asp Leu Asn Thr
74264      5025                      5030                      5035                      5040
74265      Pro Gln Lys Glu Ala Ile Lys Thr Ala Ile Asn Thr Ala His Thr Arg
74266      5045                      5050                      5055
74267      Thr Asp Val Thr Ala Glu Gln Ser Lys Ala Asn Gln Ile Asn Ser Ala
74268      5060                      5065                      5070
74269      Met His Thr Leu Arg Gln Asn Ile Ser Asp Asn Glu Ser Val Thr Asn
74270      5075                      5080                      5085
74271      Glu Ser Asn Tyr Ile Asn Ala Glu Pro Glu Lys Gln His Ala Phe Thr
74272      5090                      5095                      5100
74273      Glu Ala Leu Asn Asn Ala Lys Glu Ile Val Asn Glu Gln Gln Ala Thr
74274      5105                      5110                      5115                      5120
74275      Leu Asp Ala Asn Ser Ile Asn Gln Lys Ala Gln Ala Ile Leu Thr Thr
74276      5125                      5130                      5135
74277      Lys Asn Ala Leu Asp Gly Glu Glu Gln Leu Arg Arg Ala Lys Glu Asn
74278      5140                      5145                      5150
74279      Ala Asp Gln Glu Ile Asn Thr Leu Asn Gln Leu Thr Asp Ala Gln Arg
74280      5155                      5160                      5165
74281      Asn Ser Glu Lys Gly Leu Ile Asn Ser Ser Gln Thr Arg Thr Glu Val
74282      5170                      5175                      5180
74283      Ala Ser Gln Leu Ala Lys Ala Lys Glu Leu Asn Lys Val Met Glu Gln
74284      5185                      5190                      5195                      5200
74285      Leu Asn His Leu Ile Asn Gly Lys Asn Gln Met Ile Asn Ser Ser Lys
74286      5205                      5210                      5215
74287      Phe Ile Asn Glu Asp Ala Asn Gln Gln Gln Ala Tyr Ser Asn Ala Ile
74288      5220                      5225                      5230
74289      Ala Ser Ala Glu Ala Leu Lys Asn Lys Ser Gln Asn Pro Glu Leu Asp

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## RAW SEQUENCE LISTING

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Input Set : N:\Crf4\12172003\J724972.raw

Output Set: N:\CRF4\12222003\J724972.raw

74290	5235	5240	5245
74291	Lys Val Thr Ile Glu Gln Ala Ile Asn Asn Ile Asn Ser Ala Ile Asn		
74292	5250	5255	5260
74293	Asn Leu Asn Gly Glu Ala Lys Leu Thr Lys Ala Lys Glu Asp Ala Val		
74294	5265	5270	5275
74295	Ala Ser Ile Asn Asn Leu Ser Gly Leu Thr Asn Glu Gln Lys Thr Lys		
74296	5285	5290	5295
74297	Glu Asn Gln Ala Val Asn Gly Ala Gln Thr Arg Asp Gln Val Ala Asn		
74298	5300	5305	5310
74299	Lys Leu Arg Asp Ala Glu Ala Leu Asp Gln Ser Met Gln Thr Leu Arg		
74300	5315	5320	5325
74301	Asp Leu Val Asn Asn Gln Asn Ala Ile His Ser Thr Ser Asn Tyr Phe		
74302	5330	5335	5340
74303	Asn Glu Asp Ser Thr Gln Lys Asn Thr Tyr Asp Asn Ala Ile Asp Asn		
74304	5345	5350	5355
74305	Gly Ser Thr Tyr Ile Thr Gly Gln His Asn Pro Glu Leu Asn Lys Ser		
74306	5365	5370	5375
74307	Thr Ile Asp Gln Thr Ile Ser Arg Ile Asn Thr Ala Lys Asn Asp Leu		
74308	5380	5385	5390
74309	His Gly Val Glu Lys Leu Gln Arg Asp Lys Gly Thr Ala Asn Gln Glu		
74310	5395	5400	5405
74311	Ile Gly Gln Leu Gly Tyr Leu Asn Asp Pro Gln Lys Ser Gly Glu Glu		
74312	5410	5415	5420
74313	Ser Leu Val Asn Gly Ser Asn Thr Arg Ser Glu Val Glu Glu His Leu		
74314	5425	5430	5435
74315	Asn Glu Ala Lys Ser Leu Asn Asn Ala Met Lys Gln Leu Arg Asp Lys		
74316	5445	5450	5455
74317	Val Ala Glu Lys Thr Asn Val Lys Gln Ser Ser Asp Tyr Ile Asn Asp		
74318	5460	5465	5470
74319	Ser Thr Glu His Gln Arg Gly Tyr Asp Gln Ala Leu Gln Glu Ala Glu		
74320	5475	5480	5485
74321	Asn Ile Ile Asn Glu Ile Gly Asn Pro Thr Leu Asn Lys Ser Glu Ile		
74322	5490	5495	5500
74323	Glu Gln Lys Leu Gln Gln Leu Thr Asp Ala Gln Asn Ala Leu Gln Gly		
74324	5505	5510	5515
74325	Ser His Leu Leu Glu Glu Ala Lys Asn Asn Ala Ile Thr Gly Ile Asn		
74326	5525	5530	5535
74327	Lys Leu Thr Ala Leu Asn Asp Ala Gln Arg Gln Lys Ala Ile Glu Asn		
74328	5540	5545	5550
74329	Val Gln Ala Gln Gln Thr Ile Pro Ala Val Asn Gln Gln Leu Thr Leu		
74330	5555	5560	5565
74331	Asp Arg Glu Ile Asn Thr Ala Met Gln Ala Leu Arg Asp Lys Val Gly		
74332	5570	5575	5580
74333	Gln Gln Asn Asn Val His Gln Gln Ser Asn Tyr Phe Asn Glu Asp Glu		
74334	5585	5590	5595
74335	Gln Pro Lys His Asn Tyr Asp Asn Ser Val Gln Ala Gly Gln Thr Ile		
74336	5605	5610	5615
74337	Ile Asp Lys Leu Gln Asp Pro Ile Met Asn Lys Asn Glu Ile Glu Gln		
74338	5620	5625	5630



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74339	Ala Ile Asn Gln Ile Asn Thr Thr Gln Thr Ala Leu Ser Gly Glu Asn
74340	5635 5640 5645
74341	Lys Leu His Thr Asp Gln Glu Ser Thr Asn Arg Gln Ile Glu Gly Leu
74342	5650 5655 5660
74343	Ser Ser Leu Asn Thr Ala Gln Ile Asn Ala Glu Lys Asp Leu Val Asn
74344	5665 5670 5675 5680
74345	Gln Ala Lys Thr Arg Thr Asp Val Ala Gln Lys Leu Ala Ala Ala Lys
74346	5685 5690 5695
74347	Glu Ile Asn Ser Ala Met Ser Asn Leu Arg Asp Gly Ile Gln Asn Lys
74348	5700 5705 5710
74349	Glu Asp Ile Lys Arg Ser Ser Ala Tyr Ile Asn Ala Asp Pro Thr Lys
74350	5715 5720 5725
74351	Val Thr Ala Tyr Asp Gln Ala Leu Gln Asn Ala Glu Asn Ile Ile Asn
74352	5730 5735 5740
74353	Ala Thr Pro Asn Val Glu Leu Asn Lys Ala Thr Ile Glu Gln Ala Leu
74354	5745 5750 5755 5760
74355	Ser Arg Val Gln Gln Ala Gln Gln Asp Leu Asp Gly Val Gln Gln Leu
74356	5765 5770 5775
74357	Ala Asn Ala Lys Gln Gln Ala Thr Gln Thr Val Asn Gly Leu Asn Ser
74358	5780 5785 5790
74359	Leu Asn Asp Gly Gln Lys Arg Glu Leu Asn Leu Leu Ile Asn Ser Ala
74360	5795 5800 5805
74361	Asn Thr Arg Thr Lys Val Gln Glu Glu Leu Asn Lys Ala Thr Glu Leu
74362	5810 5815 5820
74363	Asn His Ala Met Glu Ala Leu Arg Asn Ser Val Gln Asn Val Asp Gln
74364	5825 5830 5835 5840
74365	Val Lys Gln Ser Ser Asn Tyr Val Asn Glu Asp Gln Pro Glu Gln His
74366	5845 5850 5855
74367	Asn Tyr Asp Asn Ala Val Asn Glu Ala Gln Ala Thr Ile Asn Asn Asn
74368	5860 5865 5870
74369	Ala Gln Pro Val Leu Asp Lys Leu Ala Ile Glu Arg Leu Thr Gln Thr
74370	5875 5880 5885
74371	Val Asn Thr Thr Lys Asp Ala Leu His Gly Ala Gln Lys Leu Thr Gln
74372	5890 5895 5900
74373	Asp Gln Gln Ala Ala Glu Thr Gly Ile Arg Gly Leu Thr Ser Leu Asn
74374	5905 5910 5915 5920
74375	Glu Pro Gln Lys Asn Ala Glu Val Ala Lys Val Thr Ala Ala Thr Thr
74376	5925 5930 5935
74377	Arg Asp Glu Val Arg Asn Ile Arg Gln Glu Ala Thr Thr Leu Asp Thr
74378	5940 5945 5950
74379	Ala Met Leu Gly Leu Arg Lys Ser Ile Lys Asp Lys Asn Asp Thr Lys
74380	5955 5960 5965
74381	Asn Ser Ser Lys Tyr Ile Asn Glu Asp His Asp Gln Gln Ala Tyr
74382	5970 5975 5980
74383	Asp Asn Ala Val Asn Asn Ala Gln Gln Val Ile Asp Glu Thr Gln Ala
74384	5985 5990 5995 6000
74385	Thr Leu Ser Ser Asp Thr Ile Asn Gln Leu Ala Asn Ala Val Thr Gln
74386	6005 6010 6015
74387	Ala Lys Ser Asn Leu His Gly Asp Thr Lys Leu Gln His Asp Lys Asp

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74388		6020		6025		6030	
74389	Ser	Ala	Lys	Gln	Thr	Ile	Ala
74390							
74391	Lys	His	Met	Glu	Asp	Ser	Leu
74392							
74393	Val	Gln	His	Asp	Leu	Thr	Glu
74394							
74395	Ala	Leu	Lys	Glu	Ser	Ile	Lys
74396							
74397	Asn	Tyr	Ile	Asn	Ala	Glu	Pro
74398							
74399	Val	Gln	Asn	Ala	Gln	Asn	Ile
74400							
74401	Asn	Lys	Gly	Asn	Val	Thr	Thr
74402							
74403	Asp	Ala	Leu	Asp	Gly	Asp	His
74404							
74405	Asn	Gln	Thr	Ile	Arg	Asn	Leu
74406							
74407	Ala	Glu	Lys	Asn	Leu	Val	Asn
74408							
74409	Gln	Asn	Leu	Gln	Thr	Ala	Gln
74410							
74411	Arg	Gln	Ser	Ile	Ala	Lys	Lys
74412							
74413	Leu	Asn	Glu	Asp	Pro	Gln	Ile
74414							
74415	Arg	Val	Glu	Thr	Ile	Ile	Asn
74416							
74417	Ala	Asn	Ile	Asp	Gln	Ala	Thr
74418							
74419	Leu	His	Gly	Ala	Glu	Lys	Leu
74420							
74421	Glu	Leu	Asp	Gly	Leu	Thr	Asp
74422							
74423	Arg	Glu	Gln	Ile	Asn	Thr	Ser
74424							
74425	Ile	Glu	Gln	Ala	Lys	Ala	Leu
74426							
74427	Gln	Val	Ala	Gln	Lys	Asp	Gly
74428							
74429	Glu	Asp	Ser	Ala	Gln	Lys	Asp
74430							
74431	Glu	Asp	Ile	Ile	Asn	Asn	Ser
74432							
74433	Ile	Thr	Asn	Ala	Leu	Asn	Ile
74434							
74435	Gly	Ala	Gln	Lys	Leu	Gln	Gln
74436							

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Input Set : N:\Crf4\12172003\J724972.raw

Output Set: N:\CRF4\12222003\J724972.raw

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74437      Gly Asn Leu Asn His Leu Asn Gln Pro Gln Lys Asp Ala Leu Ile Gln
74438              6420                      6425                      6430
74439      Ala Ile Asn Gly Ala Thr Ser Arg Asp Gln Val Ala Glu Lys Leu Lys
74440              6435                      6440                      6445
74441      Glu Ala Glu Ala Leu Asp Glu Ala Met Lys Gln Leu Glu Asp Gln Val
74442              6450                      6455                      6460
74443      Asn Gln Asp Asp Gln Ile Ser Asn Ser Ser Pro Phe Ile Asn Glu Asp
74444              6465                      6470                      6475                      6480
74445      Ser Asp Lys Gln Lys Thr Tyr Asn Asp Lys Ile Gln Ala Ala Lys Glu
74446              6485                      6490                      6495
74447      Ile Ile Asn Gln Thr Ser Asn Pro Thr Leu Asp Lys Gln Lys Ile Ala
74448              6500                      6505                      6510
74449      Asp Thr Leu Gln Asn Ile Lys Asp Ala Val Asn Asn Leu His Gly Asp
74450              6515                      6520                      6525
74451      Gln Lys Leu Ala Gln Ser Lys Gln Asp Ala Asn Asn Gln Leu Asn His
74452              6530                      6535                      6540
74453      Leu Asp Asp Leu Thr Glu Glu Gln Lys Asn His Phe Lys Pro Leu Ile
74454              6545                      6550                      6555                      6560
74455      Asn Asn Ala Asp Thr Arg Asp Glu Val Asn Lys Gln Leu Glu Ile Ala
74456              6565                      6570                      6575
74457      Lys Gln Leu Asn Gly Asp Met Ser Thr Leu His Lys Val Ile Asn Asp
74458              6580                      6585                      6590
74459      Lys Asp Gln Ile Gln His Leu Ser Asn Tyr Ile Asn Ala Asp Asn Asp
74460              6595                      6600                      6605
74461      Lys Lys Gln Asn Tyr Asp Asn Ala Ile Lys Glu Ala Glu Asp Leu Ile
74462              6610                      6615                      6620
74463      His Asn His Pro Asp Thr Leu Asp His Lys Ala Leu Gln Asp Leu Leu
74464              6625                      6630                      6635                      6640
74465      Asn Lys Ile Asp Gln Ala His Asn Glu Leu Asn Gly Glu Ser Arg Phe
74466              6645                      6650                      6655
74467      Lys Gln Ala Leu Asp Asn Ala Leu Asn Asp Ile Asp Ser Leu Asn Ser
74468              6660                      6665                      6670
74469      Leu Asn Val Pro Gln Arg Gln Thr Val Lys Asp Asn Ile Asn His Val
74470              6675                      6680                      6685
74471      Thr Thr Leu Glu Ser Leu Ala Gln Glu Leu Gln Lys Ala Lys Glu Leu
74472              6690                      6695                      6700
74473      Asn Asp Ala Met Lys Ala Met Arg Asp Ser Ile Met Asn Gln Glu Gln
74474              6705                      6710                      6715                      6720
74475      Ile Arg Lys Asn Ser Asn Tyr Thr Asn Glu Asp Leu Ala Gln Gln Asn
74476              6725                      6730                      6735
74477      Ala Tyr Asn His Ala Val Asp Lys Ile Asn His Ile Ile Gly Glu Asp
74478              6740                      6745                      6750
74479      Asn Ala Thr Met Asp Pro Gln Ile Lys Gln Ala Thr Gln Asp Ile
74480              6755                      6760                      6765
74481      Asn Thr Ala Ile Asn Gly Leu Asn Gly Asp Gln Lys Leu Gln Asp Ala
74482              6770                      6775                      6780
74483      Lys Thr Asp Ala Lys Gln Gln Ile Thr Asn Phe Thr Gly Leu Thr Glu
74484              6785                      6790                      6795                      6800
74485      Pro Gln Lys Gln Ala Leu Glu Asn Ile Ile Asn Gln Gln Thr Ser Arg

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Input Set : N:\Crf4\12172003\J724972.raw

Output Set: N:\CRF4\12222003\J724972.raw

74486		6805		6810		6815	
74487	Ala Asn Val	Ala Lys Gln Leu Ser His	Ala Lys Phe Leu Asn Gly Lys				
74488		6820		6825		6830	
74489	Met Glu Glu Leu Lys Val	Ala Val Ala Lys Ala Ser Leu Val Arg Gln					
74490		6835		6840		6845	
74491	Asn Ser Asn Tyr Ile Asn	Glu Asp Val Ser Glu Lys Glu Ala Tyr Glu					
74492		6850		6855		6860	
74493	Gln Ala Ile Ala Lys Gly Gln Glu Ile Ile	Asn Ser Glu Asn Asn Pro					
74494		6865		6870		6875	6880
74495	Thr Ile Ser Ser Thr Asp Ile Asn Arg Thr Ile	Gln Glu Ile Asn Asp					
74496		6885		6890		6895	
74497	Ala Glu Gln Asn Leu His Gly Asp Asn Lys Leu Arg Gln Ala Gln Glu						
74498		6900		6905		6910	
74499	Ile Ala Lys Asn Glu Ile Gln Asn Leu Asp Gly Leu Asn Ser Ala Gln						
74500		6915		6920		6925	
74501	Ile Thr Lys Leu Ile Gln Asp Ile Gly Arg Thr Thr Lys Pro Ala						
74502		6930		6935		6940	
74503	Val Thr Gln Lys Leu Glu Glu Ala Lys Ala Ile Asn Gln Ala Met Gln						
74504		6945		6950		6955	6960
74505	Gln Leu Lys Gln Ser Ile Ala Asp Lys Asp Ala Thr Leu Asn Ser Ser						
74506		6965		6970		6975	
74507	Asn Tyr Leu Asn Glu Asp Ser Glu Lys Lys Leu Ala Tyr Asp Asn Ala						
74508		6980		6985		6990	
74509	Val Ser Gln Ala Glu Gln Leu Ile Asn Gln Leu Asn Asp Pro Thr Met						
74510		6995		7000		7005	
74511	Asp Ile Ser Asn Ile Gln Ala Ile Thr Gln Lys Val Ile Gln Ala Lys						
74512		7010		7015		7020	
74513	Asp Ser Leu His Gly Ala Asn Lys Leu Ala Gln Asn Gln Ala Asp Ser						
74514		7025		7030		7035	7040
74515	Asn Leu Ile Ile Asn Gln Ser Thr Asn Leu Asn Asp Lys Gln Lys Gln						
74516		7045		7050		7055	
74517	Ala Leu Asn Asp Leu Ile Asn His Ala Gln Thr Lys Gln Gln Val Ala						
74518		7060		7065		7070	
74519	Glu Ile Ile Ala Gln Ala Asn Lys Leu Asn Asn Glu Met Gly Thr Leu						
74520		7075		7080		7085	
74521	Lys Thr Leu Val Glu Glu Gln Ser Asn Val His Gln Gln Ser Lys Tyr						
74522		7090		7095		7100	
74523	Ile Asn Glu Asp Pro Gln Val Gln Asn Ile Tyr Asn Asp Ser Ile Gln						
74524		7105		7110		7115	7120
74525	Lys Gly Arg Glu Ile Leu Asn Gly Thr Thr Asp Asp Val Leu Asn Asn						
74526		7125		7130		7135	
74527	Asn Lys Ile Ala Asp Ala Ile Gln Asn Ile His Leu Thr Lys Asn Asp						
74528		7140		7145		7150	
74529	Leu His Gly Asp Gln Lys Leu Gln Lys Ala Gln Gln Asp Ala Thr Asn						
74530		7155		7160		7165	
74531	Glu Leu Asn Tyr Leu Thr Asn Leu Asn Asn Ser Gln Arg Gln Ser Glu						
74532		7170		7175		7180	
74533	His Asp Glu Ile Asn Ser Ala Pro Ser Arg Thr Glu Val Ser Asn Asp						
74534		7185		7190		7195	7200

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74535	Leu Asn His Ala	Lys Ala Leu Asn Glu Ala Met Arg Gln Leu Glu Asn
74536		7205 7210 7215
74537	Glu Val Ala Leu Glu Asn Ser Val	Lys Lys Leu Ser Asp Phe Ile Asn
74538		7220 7225 7230
74539	Glu Asp Glu Ala Ala Gln Asn Glu Tyr Ser Asn Ala Leu Gln Lys Ala	
74540		7235 7240 7245
74541	Lys Asp Ile Ile Asn Gly Val Pro Ser Ser Thr Leu Asp Lys Ala Thr	
74542		7250 7255 7260
74543	Ile Glu Asp Ala Leu Leu Glu Leu Gln Asn Ala Arg Glu Ser Leu His	
74544		7265 7270 7275 7280
74545	Gly Glu Gln Lys Leu Gln Glu Ala Lys Asn Gln Ala Val Ala Glu Ile	
74546		7285 7290 7295
74547	Asp Asn Leu Gln Ala Leu Asn Pro Gly Gln Val Leu Ala Glu Lys Thr	
74548		7300 7305 7310
74549	Leu Val Asn Gln Ala Ser Thr Lys Pro Glu Val Gln Glu Ala Leu Gln	
74550		7315 7320 7325
74551	Lys Ala Lys Glu Leu Asn Glu Ala Met Lys Ala Leu Lys Thr Glu Ile	
74552		7330 7335 7340
74553	Asn Lys Lys Glu Gln Ile Lys Ala Asp Ser Arg Tyr Val Asn Ala Asp	
74554		7345 7350 7355 7360
74555	Ser Gly Leu Gln Ala Asn Tyr Asn Ser Ala Leu Asn Tyr Gly Ser Gln	
74556		7365 7370 7375
74557	Ile Ile Ala Thr Thr Gln Pro Pro Glu Leu Asn Lys Asp Val Ile Asn	
74558		7380 7385 7390
74559	Arg Ala Thr Gln Thr Ile Lys Thr Ala Glu Asn Asn Leu Asn Gly Gln	
74560		7395 7400 7405
74561	Ser Lys Leu Ala Glu Ala Lys Ser Asp Gly Asn Gln Ser Ile Glu His	
74562		7410 7415 7420
74563	Leu Gln Gly Leu Thr Gln Ser Gln Lys Asp Lys Gln His Asp Leu Ile	
74564		7425 7430 7435 7440
74565	Asn Gln Ala Gln Thr Lys Gln Gln Val Asp Asp Ile Val Asn Asn Ser	
74566		7445 7450 7455
74567	Lys Gln Leu Asp Asn Ser Met Asn Gln Leu Gln Gln Ile Val Asn Asn	
74568		7460 7465 7470
74569	Asp Asn Thr Val Lys Gln Asn Ser Asp Phe Ile Asn Glu Asp Ser Ser	
74570		7475 7480 7485
74571	Gln Gln Asp Ala Tyr Asn His Ala Ile Gln Ala Ala Lys Asp Leu Ile	
74572		7490 7495 7500
74573	Thr Ala His Pro Thr Ile Met Asp Lys Asn Gln Ile Asp Gln Ala Ile	
74574		7505 7510 7515 7520
74575	Glu Asn Ile Lys Gln Ala Leu Asn Asp Leu His Gly Ser Asn Lys Leu	
74576		7525 7530 7535
74577	Ser Glu Asp Lys Lys Glu Ala Ser Glu Gln Leu Gln Asn Leu Asn Ser	
74578		7540 7545 7550
74579	Leu Thr Asn Gly Gln Lys Asp Thr Ile Leu Asn His Ile Phe Ser Ala	
74580		7555 7560 7565
74581	Pro Thr Arg Ser Gln Val Gly Glu Lys Ile Ala Ser Ala Lys Gln Leu	
74582		7570 7575 7580
74583	Asn Asn Thr Met Lys Ala Leu Arg Asp Ser Ile Ala Asp Asn Asn Glu	

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74584	7585	7590	7595	7600
74585	Ile Leu Gln Ser Ser Lys Tyr Phe Asn Glu Asp Ser Glu Gln Gln Asn			
74586	7605	7610	7615	
74587	Ala Tyr Asn Gln Ala Val Asn Lys Ala Lys Asn Ile Ile Asn Asp Gln			
74588	7620	7625	7630	
74589	Pro Thr Pro Val Met Ala Asn Asp Glu Ile Gln Ser Val Leu Asn Glu			
74590	7635	7640	7645	
74591	Val Lys Gln Thr Lys Asp Asn Leu His Gly Asp Gln Lys Leu Ala Asn			
74592	7650	7655	7660	
74593	Asp Lys Thr Asp Ala Gln Ala Thr Leu Asn Ala Leu Asn Tyr Leu Asn			
74594	7665	7670	7675	7680
74595	Gln Ala Gln Arg Gly Asn Leu Glu Thr Lys Val Gln Asn Ser Asn Ser			
74596	7685	7690	7695	
74597	Arg Pro Glu Val Gln Lys Val Val Gln Leu Ala Asn Gln Leu Asn Asp			
74598	7700	7705	7710	
74599	Ala Met Lys Lys Leu Asp Asp Ala Leu Thr Gly Asn Asp Ala Ile Lys			
74600	7715	7720	7725	
74601	Gln Thr Ser Asn Tyr Ile Asn Glu Asp Thr Ser Gln Gln Val Asn Phe			
74602	7730	7735	7740	
74603	Asp Glu Tyr Thr Asp Arg Gly Lys Asn Ile Val Ala Glu Gln Thr Asn			
74604	7745	7750	7755	7760
74605	Pro Asn Met Ser Pro Thr Asn Ile Asn Thr Ile Ala Asp Lys Ile Thr			
74606	7765	7770	7775	
74607	Glu Ala Lys Asn Asp Leu His Gly Val Gln Lys Leu Lys Gln Ala Gln			
74608	7780	7785	7790	
74609	Gln Gln Ser Ile Asn Thr Ile Asn Gln Met Thr Gly Leu Asn Gln Ala			
74610	7795	7800	7805	
74611	Gln Lys Glu Gln Leu Asn Gln Glu Ile Gln Gln Thr Gln Thr Arg Ser			
74612	7810	7815	7820	
74613	Glu Val His Gln Val Ile Asn Lys Ala Gln Ala Leu Asn Asp Ser Met			
74614	7825	7830	7835	7840
74615	Asn Thr Leu Arg Gln Ser Ile Thr Asp Glu His Glu Val Lys Gln Thr			
74616	7845	7850	7855	
74617	Ser Asn Tyr Ile Asn Glu Thr Val Gly Asn Gln Thr Ala Tyr Asn Asn			
74618	7860	7865	7870	
74619	Ala Val Asp Arg Val Lys Gln Ile Ile Asn Gln Thr Ser Asn Pro Thr			
74620	7875	7880	7885	
74621	Met Asn Pro Leu Glu Val Glu Arg Ala Thr Ser Asn Val Lys Ile Ser			
74622	7890	7895	7900	
74623	Lys Asp Ala Leu His Gly Glu Arg Glu Leu Asn Asp Asn Lys Asn Ser			
74624	7905	7910	7915	7920
74625	Lys Thr Phe Ala Val Asn His Leu Asp Asn Leu Asn Gln Ala Gln Lys			
74626	7925	7930	7935	
74627	Glu Ala Leu Thr His Glu Ile Glu Gln Ala Thr Ile Val Ser Gln Val			
74628	7940	7945	7950	
74629	Asn Asn Ile Tyr Asn Lys Ala Lys Ala Leu Asn Asn Asp Met Lys Lys			
74630	7955	7960	7965	
74631	Leu Lys Asp Ile Val Ala Gln Gln Asp Asn Val Arg Gln Ser Asn Asn			
74632	7970	7975	7980	

## RAW SEQUENCE LISTING

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Output Set: N:\CRF4\12222003\J724972.raw

74633	Tyr	Ile	Asn	Glu	Asp	Ser	Thr	Pro	Gln	Asn	Met	Tyr	Asn	Asp	Thr	Ile
74634	7985							7990			7995					8000
74635	Asn	His	Ala	Gln	Ser	Ile	Ile	Asp	Gln	Val	Ala	Asn	Pro	Thr	Met	Ser
74636					8005					8010					8015	
74637	His	Asp	Glu	Ile	Glu	Asn	Ala	Ile	Asn	Asn	Ile	Lys	His	Ala	Ile	Asn
74638				8020					8025					8030		
74639	Ala	Leu	Asp	Gly	Glu	His	Lys	Leu	Gln	Gln	Ala	Lys	Glu	Asn	Ala	Asn
74640			8035					8040					8045			
74641	Leu	Leu	Ile	Asn	Ser	Leu	Asn	Asp	Leu	Asn	Ala	Pro	Gln	Arg	Asp	Ala
74642		8050					8055					8060				
74643	Ile	Asn	Arg	Leu	Val	Asn	Glu	Ala	Gln	Thr	Arg	Glu	Lys	Val	Ala	Glu
74644	8065					8070					8075					8080
74645	Gln	Leu	Gln	Ser	Ala	Gln	Ala	Leu	Asn	Asp	Ala	Met	Lys	His	Leu	Arg
74646				8085						8090					8095	
74647	Asn	Ser	Ile	Gln	Asn	Gln	Ser	Ser	Val	Arg	Gln	Glu	Ser	Lys	Tyr	Ile
74648			8100						8105						8110	
74649	Asn	Ala	Ser	Asp	Ala	Lys	Lys	Glu	Gln	Tyr	Asn	His	Ala	Val	Arg	Glu
74650		8115						8120					8125			
74651	Val	Glu	Asn	Ile	Ile	Asn	Glu	Gln	His	Pro	Thr	Leu	Asp	Lys	Glu	Ile
74652		8130					8135					8140				
74653	Ile	Lys	Gln	Leu	Thr	Asp	Gly	Val	Asn	Gln	Ala	Asn	Asn	Asp	Leu	Asn
74654	8145					8150					8155				8160	
74655	Gly	Val	Glu	Leu	Leu	Asp	Ala	Asp	Lys	Gln	Asn	Ala	His	Gln	Ser	Ile
74656				8165					8170						8175	
74657	Pro	Thr	Leu	Met	His	Leu	Asn	Gln	Ala	Gln	Gln	Asn	Ala	Leu	Asn	Glu
74658			8180						8185					8190		
74659	Lys	Ile	Asn	Asn	Ala	Val	Thr	Arg	Thr	Glu	Val	Ala	Ala	Ile	Ile	Gly
74660		8195						8200					8205			
74661	Gln	Ala	Lys	Leu	Leu	Asp	His	Ala	Met	Glu	Asn	Leu	Glu	Glu	Ser	Ile
74662		8210				8215						8220				
74663	Lys	Asp	Lys	Glu	Gln	Val	Lys	Gln	Ser	Ser	Asn	Tyr	Ile	Asn	Glu	Asp
74664	8225				8230					8235					8240	
74665	Ser	Asp	Val	Gln	Glu	Thr	Tyr	Asp	Asn	Ala	Val	Asp	His	Val	Thr	Glu
74666				8245						8250					8255	
74667	Ile	Leu	Asn	Gln	Thr	Val	Asn	Pro	Thr	Leu	Ser	Ile	Glu	Asp	Ile	Glu
74668			8260						8265					8270		
74669	His	Ala	Ile	Asn	Glu	Val	Asn	Gln	Ala	Lys	Lys	Gln	Leu	Arg	Gly	Lys
74670		8275						8280					8285			
74671	Gln	Lys	Leu	Tyr	Gln	Thr	Ile	Asp	Leu	Ala	Asp	Lys	Glu	Leu	Ser	Lys
74672		8290					8295					8300				
74673	Leu	Asp	Asp	Leu	Thr	Ser	Gln	Gln	Ser	Ser	Ser	Ile	Ser	Asn	Gln	Ile
74674	8305					8310					8315				8320	
74675	Tyr	Thr	Ala	Lys	Thr	Arg	Thr	Glu	Val	Ala	Gln	Ala	Ile	Glu	Lys	Ala
74676				8325						8330					8335	
74677	Lys	Ser	Leu	Asn	His	Ala	Met	Lys	Ala	Leu	Asn	Lys	Val	Tyr	Lys	Asn
74678		8340							8345					8350		
74679	Ala	Asp	Lys	Val	Leu	Asp	Ser	Ser	Arg	Phe	Ile	Asn	Glu	Asp	Gln	Pro
74680		8355						8360					8365			
74681	Glu	Lys	Lys	Ala	Tyr	Gln	Gln	Ala	Ile	Asn	His	Val	Asp	Ser	Ile	Ile

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Input Set : N:\Crf4\12172003\J724972.raw

Output Set: N:\CRF4\12222003\J724972.raw

74682	8370	8375	8380
74683	His Arg Gln Thr Asn Pro Glu Met Asp Pro Thr Val Ile Asn Ser Ile		
74684	8385	8390	8395 8400
74685	Thr His Glu Leu Glu Thr Ala Gln Asn Asn Leu His Gly Asp Gln Lys		
74686		8405 8410	8415
74687	Leu Ala His Ala Gln Gln Asp Ala Ala Asn Val Ile Asn Gly Leu Ile		
74688		8420 8425	8430
74689	His Leu Asn Val Ala Gln Arg Glu Val Met Ile Asn Thr Asn Thr Asn		
74690		8435 8440	8445
74691	Ala Thr Thr Arg Glu Lys Val Ala Lys Asn Leu Asp Asn Ala Gln Ala		
74692		8450 8455	8460
74693	Leu Asp Lys Ala Met Glu Thr Leu Gln Gln Val Val Ala His Lys Asn		
74694		8465 8470	8475 8480
74695	Asn Ile Leu Asn Asp Ser Lys Tyr Leu Asn Glu Asp Ser Lys Tyr Gln		
74696		8485 8490	8495
74697	Gln Gln Tyr Asp Arg Val Ile Ala Asp Ala Glu Gln Leu Leu Asn Gln		
74698		8500 8505	8510
74699	Thr Thr Asn Pro Thr Leu Glu Pro Tyr Lys Val Asp Ile Val Lys Asp		
74700		8515 8520	8525
74701	Asn Val Leu Ala Asn Glu Lys Ile Leu Phe Gly Ala Glu Lys Leu Ser		
74702		8530 8535	8540
74703	Tyr Asp Lys Ser Asn Ala Asn Asp Glu Ile Lys His Met Asn Tyr Leu		
74704		8545 8550	8555 8560
74705	Asn Asn Ala Gln Lys Gln Ser Ile Lys Asp Met Ile Ser His Ala Ala		
74706		8565 8570	8575
74707	Leu Arg Thr Glu Val Lys Gln Leu Leu Gln Gln Ala Lys Ile Leu Asp		
74708		8580 8585	8590
74709	Glu Ala Met Lys Ser Leu Glu Asp Lys Thr Gln Val Val Ile Thr Asp		
74710		8595 8600	8605
74711	Thr Thr Leu Pro Asn Tyr Thr Glu Ala Ser Glu Asp Lys Lys Glu Lys		
74712		8610 8615	8620
74713	Val Asp Gln Thr Val Ser His Ala Gln Ala Ile Ile Asp Lys Ile Asn		
74714		8625 8630	8635 8640
74715	Gly Ser Asn Val Ser Leu Asp Gln Val Arg Gln Ala Leu Glu Gln Leu		
74716		8645 8650	8655
74717	Thr Gln Ala Ser Glu Asn Leu Asp Gly Asp Gln Arg Val Glu Glu Ala		
74718		8660 8665	8670
74719	Lys Val His Ala Asn Gln Thr Ile Asp Gln Leu Thr His Leu Asn Ser		
74720		8675 8680	8685
74721	Leu Gln Gln Gln Thr Ala Lys Glu Ser Val Lys Asn Ala Thr Lys Leu		
74722		8690 8695	8700
74723	Glu Glu Ile Ala Thr Val Ser Asn Asn Ala Gln Ala Leu Asn Lys Val		
74724		8705 8710	8715 8720
74725	Met Gly Lys Leu Glu Gln Phe Ile Asn His Ala Asp Ser Val Glu Asn		
74726		8725 8730	8735
74727	Ser Asp Asn Tyr Arg Gln Ala Asp Asp Lys Ile Ile Ala Tyr Asp		
74728		8740 8745	8750
74729	Glu Ala Leu Glu His Gly Gln Asp Ile Gln Lys Thr Asn Ala Thr Gln		
74730		8755 8760	8765



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Input Set : N:\Crf4\12172003\J724972.raw

Output Set: N:\CRF4\12222003\J724972.raw

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74731 Asn Glu Thr Lys Gln Ala Leu Gln Gln Leu Ile Tyr Ala Glu Thr Ser
74732      8770      8775      8780
74733 Leu Asn Gly Phe Glu Arg Leu Asn His Ala Arg Pro Arg Ala Leu Glu
74734      8785      8790      8795      8800
74735 Tyr Ile Lys Ser Leu Glu Lys Ile Asn Asn Ala Gln Lys Ser Ala Leu
74736      8805      8810      8815
74737 Glu Asp Lys Val Thr Gln Ser His Asp Leu Leu Glu Leu Glu His Ile
74738      8820      8825      8830
74739 Val Asn Glu Gly Thr Asn Leu Asn Asp Ile Met Gly Glu Leu Ala Asn
74740      8835      8840      8845
74741 Ala Ile Val Asn Asn Tyr Ala Pro Thr Lys Ala Ser Ile Asn Tyr Ile
74742      8850      8855      8860
74743 Asn Ala Asp Asn Leu Arg Lys Asp Asn Phe Thr Gln Ala Ile Asn Asn
74744      8865      8870      8875      8880
74745 Ala Arg Asp Ala Leu Asn Lys Thr Gln Gly Gln Asn Leu Asp Phe Asn
74746      8885      8890      8895
74747 Ala Ile Asp Thr Phe Lys Asp Asp Ile Phe Lys Thr Lys Asp Ala Leu
74748      8900      8905      8910
74749 Asn Gly Ile Glu Arg Leu Thr Ala Ala Lys Ser Lys Ala Glu Lys Leu
74750      8915      8920      8925
74751 Ile Asp Ser Leu Lys Phe Ile Asn Lys Ala Gln Phe Thr His Ala Asn
74752      8930      8935      8940
74753 Asp Glu Ile Met Asn Thr Asn Ser Ile Ala Gln Leu Ser Arg Ile Val
74754      8945      8950      8955      8960
74755 Asn Gln Ala Phe Asp Leu Asn Asp Ala Met Lys Ser Leu Arg Asp Glu
74756      8965      8970      8975
74757 Leu Asn Asn Gln Ala Phe Pro Val Gln Ala Ser Ser Asn Tyr Ile Asn
74758      8980      8985      8990
74759 Ser Asp Glu Asp Leu Lys Gln Gln Phe Asp His Ala Leu Ser Asn Ala
74760      8995      9000      9005
74761 Arg Lys Val Leu Ala Lys Glu Asn Gly Lys Asn Leu Asp Glu Lys Gln
74762      9010      9015      9020
74763 Ile Gln Gly Leu Lys Gln Val Ile Glu Asp Thr Lys Asp Ala Leu Asn
74764      9025      9030      9035      9040
74765 Gly Ile Gln Arg Leu Ser Lys Ala Lys Ala Lys Ala Ile Gln Tyr Val
74766      9045      9050      9055
74767 Gln Ser Leu Ser Tyr Ile Asn Asp Ala Gln Arg His Ile Ala Glu Asn
74768      9060      9065      9070
74769 Asn Ile His Asn Ser Asp Asp Leu Ser Ser Leu Ala Asn Thr Leu Ser
74770      9075      9080      9085
74771 Lys Ala Ser Asp Leu Asp Asn Ala Met Lys Asp Leu Arg Asp Thr Ile
74772      9090      9095      9100
74773 Glu Ser Asn Ser Thr Ser Val Pro Asn Ser Val Asn Tyr Ile Asn Ala
74774      9105      9110      9115      9120
74775 Asp Lys Asn Leu Gln Ile Glu Phe Asp Glu Ala Leu Gln Gln Ala Ser
74776      9125      9130      9135
74777 Ala Thr Ser Ser Lys Thr Ser Glu Asn Pro Ala Thr Ile Glu Glu Val
74778      9140      9145      9150
74779 Leu Gly Leu Ser Gln Ala Ile Tyr Asp Thr Lys Asn Ala Leu Asn Gly

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Input Set : N:\Crf4\12172003\J724972.raw

Output Set: N:\CRF4\12222003\J724972.raw

74780	9155	9160	9165
74781	Glu Gln Arg Leu Ala Thr	Glu Lys Ser Lys Asp	Leu Lys Leu Ile Lys
74782	9170	9175	9180
74783	Gly Leu Lys Asp Leu Asn	Lys Ala Gln Leu Glu	Asp Val Thr Asn Lys
74784	9185	9190	9195 9200
74785	Val Asn Ser Ala Asn Thr	Leu Thr Glu Leu Ser	Gln Leu Thr Gln Ser
74786	9205	9210	9215
74787	Thr Leu Glu Leu Asn Asp	Lys Met Lys Leu Leu	Arg Asp Lys Leu Lys
74788	9220	9225	9230
74789	Thr Leu Val Asn Pro Val	Lys Ala Ser Leu Asn	Tyr Arg Asn Ala Asp
74790	9235	9240	9245
74791	Tyr Asn Leu Lys Arg Gln	Phe Asn Lys Ala Leu	Lys Glu Ala Lys Gly
74792	9250	9255	9260
74793	Val Leu Asn Lys Asn Ser	Gly Thr Asn Val Asn	Ile Asn Asp Ile Gln
74794	9265	9270	9275 9280
74795	His Leu Leu Thr Gln Ile	Asp Asn Ala Lys Asp	Gln Leu Asn Gly Glu
74796	9285	9290	9295
74797	Arg Arg Leu Lys Glu His	Gln Gln Lys Ser Glu	Val Phe Ile Ile Lys
74798	9300	9305	9310
74799	Glu Leu Asp Ile Leu Asn	Asn Ala Gln Lys Ala	Ala Ile Ile Asn Gln
74800	9315	9320	9325
74801	Ile Arg Ala Ser Lys Asp	Ile Lys Ile Ile Asn	Gln Ile Val Asp Asn
74802	9330	9335	9340
74803	Ala Ile Glu Leu Asn Asp	Ala Met Gln Gly Leu	Lys Glu His Val Ala
74804	9345	9350	9355 9360
74805	Gln Leu Thr Ala Thr Thr	Lys Asp Asn Ile Glu	Tyr Leu Asn Ala Asp
74806	9365	9370	9375
74807	Glu Asp His Lys Leu Gln	Tyr Asp Tyr Ala Ile	Asn Leu Ala Asn Asn
74808	9380	9385	9390
74809	Val Leu Asp Lys Glu Asn	Gly Thr Asn Lys Asp	Ala Asn Ile Ile Ile
74810	9395	9400	9405
74811	Gly Met Ile Gln Asn Met	Asp Asp Ala Arg Ala	Leu Leu Asn Gly Ile
74812	9410	9415	9420
74813	Glu Arg Leu Lys Asp Ala	Gln Thr Lys Ala His	Asn Asp Ile Lys Asp
74814	9425	9430	9435 9440
74815	Thr Leu Lys Arg Gln Leu	Asp Glu Ile Glu His	Ala Asn Ala Thr Ser
74816	9445	9450	9455
74817	Asn Ser Lys Ala Gln Ala	Lys Gln Met Val Asn	Glu Glu Ala Arg Lys
74818	9460	9465	9470
74819	Ala Leu Ser Asn Ile Asn	Asp Ala Thr Ser Asn	Asp Leu Val Asn Gln
74820	9475	9480	9485
74821	Ala Lys Asp Glu Gly Gln	Ser Ala Ile Glu His	Ile His Ala Asp Glu
74822	9490	9495	9500
74823	Leu Pro Lys Ala Lys Leu	Asp Ala Asn Gln Met	Ile Asp Gln Lys Val
74824	9505	9510	9515 9520
74825	Glu Asp Ile Asn His Leu	Ile Ser Gln Asn Pro	Asn Leu Ser Asn Glu
74826	9525	9530	9535
74827	Glu Lys Asn Lys Leu Ile	Ser Gln Ile Asn Lys	Leu Val Asn Gly Ile
74828	9540	9545	9550

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74829   Lys Asn Glu Ile Gln Gln Ala Ile Asn Lys Gln Gln Ile Glu Asn Ala
74830           9555                               9560                               9565
74831   Thr Thr Lys Leu Asp Glu Val Ile Glu Thr Thr Lys Lys Leu Ile Ile
74832           9570                               9575                               9580
74833   Ala Lys Ala Glu Ala Lys Gln Met Ile Lys Glu Leu Ser Gln Lys Lys
74834   9585                               9590                               9595                               9600
74835   Arg Asp Ala Ile Asn Asn Asn Thr Asp Leu Thr Pro Ser Gln Lys Ala
74836           9605                               9610                               9615
74837   His Ala Leu Ala Asp Ile Asp Lys Thr Glu Lys Asp Ala Leu Gln His
74838           9620                               9625                               9630
74839   Ile Glu Asn Ser Asn Ser Ile Asp Asp Ile Asn Asn Asn Lys Glu His
74840           9635                               9640                               9645
74841   Ala Phe Asn Thr Leu Ala His Ile Ile Ile Trp Asp Thr Asp Gln Gln
74842           9650                               9655                               9660
74843   Pro Leu Val Phe Glu Val Pro Glu Leu Ser Leu Gln Asn Ala Leu Val
74844   9665                               9670                               9675                               9680
74845   Thr Ser Glu Val Val Val His Arg Asp Glu Thr Ile Ser Leu Glu Ser
74846           9685                               9690                               9695
74847   Ile Lys Lys Lys Met Thr Leu Thr Asp Glu Leu Lys Val Asn Ile Val
74848           9700                               9705                               9710
74849   Ser Leu Pro Asn Thr Asp Lys Val Ala Asp His Leu Thr Ala Lys Val
74850           9715                               9720                               9725
74851   Lys Val Ile Leu Ala Asp Gly Ser Tyr Val Thr Val Asn Val Pro Val
74852           9730                               9735                               9740
74853   Lys Val Val Glu Lys Glu Leu Gln Ile Ala Lys Lys Asp Ala Ile Lys
74854   9745                               9750                               9755                               9760
74855   Thr Ile Asp Val Leu Val Lys Gln Lys Ile Lys Asp Ile Asp Ser Asn
74856           9765                               9770                               9775
74857   Asn Glu Leu Thr Ser Thr Gln Arg Glu Asp Ala Lys Ala Glu Ile Glu
74858           9780                               9785                               9790
74859   Arg Leu Lys Lys Gln Ala Ile Asp Lys Val Asn His Ser Lys Ser Ile
74860           9795                               9800                               9805
74861   Lys Asp Ile Glu Thr Val Lys Arg Thr Asp Phe Glu Glu Ile Asp Gln
74862           9810                               9815                               9820
74863   Phe Asp Pro Lys Arg Phe Thr Leu Asn Lys Ala Lys Lys Asp Ile Ile
74864   9825                               9830                               9835                               9840
74865   Thr Asp Val Asn Thr Gln Ile Gln Asn Gly Phe Lys Glu Ile Glu Thr
74866           9845                               9850                               9855
74867   Ile Lys Gly Leu Thr Ser Asn Glu Lys Thr Gln Phe Asp Lys Gln Leu
74868           9860                               9865                               9870
74869   Thr Ala Leu Gln Lys Glu Phe Leu Glu Lys Val Glu His Ala His Asn
74870           9875                               9880                               9885
74871   Leu Val Glu Leu Asn Gln Leu Gln Gln Glu Phe Asn Asn Arg Tyr Lys
74872           9890                               9895                               9900
74873   His Ile Leu Asn Gln Ala His Leu Leu Gly Glu Lys His Ile Ala Glu
74874   9905                               9910                               9915                               9920
74875   His Lys Leu Gly Tyr Val Val Val Asn Lys Thr Gln Gln Ile Leu Asn
74876           9925                               9930                               9935
74877   Asn Gln Ser Ala Ser Tyr Phe Ile Lys Gln Trp Ala Leu Asp Arg Ile

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## RAW SEQUENCE LISTING

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Input Set : N:\Crf4\12172003\J724972.raw

Output Set: N:\CRF4\12222003\J724972.raw

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74878          9940          9945          9950
74879  Lys Gln Ile Gln Leu Glu Thr Met Asn Ser Ile Arg Gly Ala His Thr
74880          9955          9960          9965
74881  Val Gln Asp Val His Lys Ala Leu Leu Gln Gly Ile Glu Gln Ile Leu
74882          9970          9975          9980
74883  Lys Val Asn Val Ser Ile Ile Asn Gln Ser Phe Asn Asp Ser Leu His
74884          9985          9990          9995          10000
74885  Asn Phe Asn Tyr Leu His Ser Lys Phe Asp Ala Arg Leu Arg Glu Lys
E--> 74886          (10005)          (10010)          (10015)
74887  Asp Val Ala Asn His Ile Val Gln Thr Glu Thr Phe Lys Glu Val Leu
E--> 74888          (10020)          (10025)          (10030)
74889  Lys Gly Thr Gly Val Glu Pro Gly Lys Ile Asn Lys Glu Thr Gln Gln
E--> 74890          (10035)          (10040)          (10045)
74891  Pro Lys Leu His Lys Asn Asp Asn Asp Ser Leu Phe Lys His Leu Val
E--> 74892          (10050)          (10055)          (10060)
74893  Asp Asn Phe Gly Lys Thr Val Gly Val Ile Thr Leu Thr Gly Leu Leu
E--> 74894          (10065)          (10070)          (10075)          (10080)
74895  Ser Ser Phe Trp Leu Val Leu Ala Lys Arg Arg Lys Lys Glu Glu Glu
E--> 74896          (10085)          (10090)          (10095)
74897  Glu Lys Gln Ser Ile Lys Asn His His Lys Asp Ile Arg Leu Ser Asp
E--> 74898          (10100)          (10105)          (10110)
74899  Thr Asp Lys Ile Asp Pro Ile Val Ile Thr Lys Arg Lys Ile Asp Lys
E--> 74900          (10115)          (10120)          (10125)
74901  Glu Glu Gln Ile Gln Asn Asp Asp Lys His Ser Ile Pro Val Ala Lys
E--> 74902          (10130)          (10135)          (10140)
74903  His Lys Lys Ser Lys Glu Lys Gln Leu Ser Glu Glu Asp Ile His Ser
E--> 74904          (10145)          (10150)          (10155)          (10160)
74905  Ile Pro Val Val Lys Arg Lys Gln Asn Ser Asp Asn Lys Asp Thr Lys
E--> 74906          (10165)          (10170)          (10175)
74907  Gln Lys Lys Val Thr Ser Lys Lys Lys Thr Pro Gln Ser Thr Lys
E--> 74908          (10180)          (10185)          (10190)
74909  Lys Val Val Lys Thr Lys Lys Arg Ser Lys Lys
E--> 74910          (10195)          (10200)

```

When numbering amino acids, please include a space between the ending number and the following amino acid. Numbers cannot extend into the following amino acid.

e.g. Leu 10005 | P | His

When numbering the last amino acid on a line, please ensure ending number appears directly under last letter of the amino acid

e.g. His Ser 10160

## RAW SEQUENCE LISTING ERROR SUMMARY

DATE: 12/22/2003

PATENT APPLICATION: US/10/724,972

TIME: 07:13:37

Input Set : N:\Crf4\12172003\J724972.raw

Output Set: N:\CRF4\12222003\J724972.raw

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:1; Line(s) 3  
Seq#:98; Line(s) 1577  
Seq#:109; Line(s) 1758  
Seq#:130; Line(s) 2141  
Seq#:151; Line(s) 2447  
Seq#:218; Line(s) 3554  
Seq#:221; Line(s) 3588  
Seq#:326; Line(s) 5545,5546,5547,5548,5549,5550,5551,5552,5553,5554,5555  
Seq#:326; Line(s) 5556,5557,5558,5559,5560,5561,5562,5563,5564,5565,5566  
Seq#:326; Line(s) 5567,5568,5569,5570,5571,5572,5573,5574,5575,5576,5577  
Seq#:326; Line(s) 5578,5579,5580,5581,5582,5583,5584,5585,5586,5587,5588  
Seq#:326; Line(s) 5589,5590,5591,5592,5593,5594,5595,5596,5597,5598,5599  
Seq#:326; Line(s) 5600,5601,5602,5603,5604,5605,5606,5607,5608,5609,5610  
Seq#:326; Line(s) 5611,5612,5613,5614,5615,5616,5617,5618,5619,5620,5621  
Seq#:326; Line(s) 5622,5623,5624,5625,5626,5627,5628,5629,5630,5631,5632  
Seq#:326; Line(s) 5633,5634,5635,5636,5637,5638,5639,5640,5641,5642,5643  
Seq#:326; Line(s) 5644,5645,5646,5647,5648,5649,5650,5651,5652,5653,5654  
Seq#:326; Line(s) 5655,5656,5657,5658,5659,5660,5661,5662,5663,5664,5665  
Seq#:326; Line(s) 5666,5667,5668,5669,5670,5671,5672,5673,5674,5675,5676  
Seq#:326; Line(s) 5677,5678,5679,5680,5681,5682,5683,5684,5685,5686,5687  
Seq#:326; Line(s) 5688,5689,5690,5691,5692,5693,5694,5695,5696,5697,5698  
Seq#:326; Line(s) 5699,5700,5701,5702,5703,5704,5705,5706,5707,5708,5709  
Seq#:326; Line(s) 5710,5711,5712,5713,5714,5715,5716,5717,5718,5719,5720  
Seq#:326; Line(s) 5721,5722,5723,5724,5725,5726,5727,5728,5729,5730,5731  
Seq#:326; Line(s) 5732,5733,5734,5735,5736,5737,5738,5739,5740,5741,5742  
Seq#:326; Line(s) 5743,5744,5745,5746,5747,5748,5749,5750,5751,5752,5753  
Seq#:326; Line(s) 5754,5755,5756,5757,5758,5759,5760,5761,5762,5763,5764  
Seq#:326; Line(s) 5765,5766,5767,5768,5769,5770,5771,5772,5773,5774,5775  
Seq#:326; Line(s) 5776,5777,5778,5779,5780,5781,5782,5783,5784,5785,5786  
Seq#:326; Line(s) 5787,5788,5789,5790,5791,5792,5793,5794,5795,5796,5797  
Seq#:326; Line(s) 5798,5799,5800,5801,5802,5803,5804,5805,5806,5807,5808  
Seq#:326; Line(s) 5809,5810,5811,5812,5813,5814,5815,5816,5817,5818,5819  
Seq#:326; Line(s) 5820,5821,5822,5823,5824,5825,5826,5827,5828,5829,5830  
Seq#:326; Line(s) 5831,5832,5833,5834,5835,5836,5837,5838,5839,5840,5841  
Seq#:326; Line(s) 5842,5843,5844,5845,5846,5847,5848,5849,5850,5851,5852  
Seq#:326; Line(s) 5853,5854,5855,5856,5857,5858,5859,5860,5861,5862,5863  
Seq#:326; Line(s) 5864,5865,5866,5867,5868,5869,5870,5871,5872,5873,5874  
Seq#:326; Line(s) 5875,5876,5877,5878,5879,5880,5881,5882,5883,5884,5885  
Seq#:326; Line(s) 5886,5887,5888,5889  
Seq#:630; Line(s) 11412  
Seq#:701; Line(s) 12694  
Seq#:792; Line(s) 14362  
Seq#:1212; Line(s) 21595

**RAW SEQUENCE LISTING ERROR SUMMARY**

DATE: 12/22/2003

PATENT APPLICATION: **US/10/724,972**

TIME: 07:13:37

Input Set : **N:\CrF4\12172003\J724972.raw**Output Set: **N:\CRF4\12222003\J724972.raw**

Seq#:1408; Line(s) 24816  
Seq#:1802; Line(s) 31327  
Seq#:1862; Line(s) 32403  
Seq#:2170; Line(s) 37886, 37887, 37888, 37889, 37890, 37891, 37892, 37893, 37894  
Seq#:2170; Line(s) 37895, 37896, 37897, 37898, 37899, 37900, 37901, 37902, 37903  
Seq#:2170; Line(s) 37904  
Seq#:2278; Line(s) 39901  
Seq#:2419; Line(s) 42184

## VERIFICATION SUMMARY

PATENT APPLICATION: US/10/724,972

DATE: 12/22/2003

TIME: 07:13:37

Input Set : N:\Crf4\12172003\J724972.raw

Output Set: N:\CRF4\12222003\J724972.raw

L:1596 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:98 after pos.:1020  
 L:1774 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:109 after pos.:840  
 L:2143 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:130 after pos.:0  
 L:2451 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:151 after pos.:120  
 L:3557 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:218 after pos.:60  
 L:3591 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:221 after pos.:60  
 L:11422 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:630 after pos.:480  
 L:12730 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:701 after pos.:2040  
 L:14367 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:792 after pos.:180  
 L:21605 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1212 after pos.:480  
 L:24818 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1408 after pos.:0  
 L:31329 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1802 after pos.:0  
 L:32405 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1862 after pos.:0  
 L:39913 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2278 after pos.:600  
 L:42187 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2419 after pos.:60  
 L:47969 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2785 after pos.:480  
 L:50004 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2917 after pos.:960  
 L:55570 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3279 after pos.:60  
 M:341 Repeated in SeqNo=3279  
 L:55612 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3282 after pos.:120  
 L:55701 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3287 after pos.:600  
 L:59486 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3534 after pos.:0  
 L:60496 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3593 after pos.:0  
 L:61235 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3640 after pos.:240  
 L:61885 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3677 after pos.:60  
 L:68029 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3923 after pos.:32  
 L:74886 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:4098  
 M:332 Repeated in SeqNo=4098  
 L:105668 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4984 after pos.:160  
 L:126353 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5634 after pos.:0  
 L:156395 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6557 after pos.:160  
 L:160184 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6689 after pos.:320  
 L:170599 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7051 after pos.:16  
 M:341 Repeated in SeqNo=7051  
 L:170828 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7059 after pos.:192